

**(57) ABSTRACT :**

An apparatus (1) is provided for measuring deformation of a surface of a pipe (22). The apparatus has a central portion (2) to which a detector section (3) is mounted. At each side, guides (4) are connected to the housing via arms (5). The housing has a platform (6) below which an inverted U-shaped section (7) is provided, with the platform forming the base of the U. At the rear of this section a wheel is rotatably mounted on an axle. Forward of this, and also within the U-shaped section is mounted a further U-shaped section (10). This is pivotally mounted at its rear end by means of a pin such that its forward end is free to move vertically. The forward end has mounted within it a further wheel (12) on an axle (13). Projecting upwards from the second U-shaped section (10) is a rod (14) which passes through a hole (15) in platform (6). Around the lower portion of the rod is provided a spring (16) which biases the detector downwards and away from the platform. The rod moves vertically with the wheel (12) as it passes over bumps in the pipe. The rod is connected to a potentiometer which varies an output voltage. By correlating the variations in the output voltage with the distance moved by the detector, deformations in the pipe (22) may be mapped.